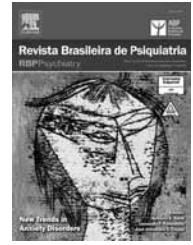




Revista Brasileira de Psiquiatria

RBP Psychiatry

Official Journal of the Brazilian Psychiatric Association
Volume 34 • Supplement 1 • June/2012



ARTICLE

Social anxiety and negative early life events in university students

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DESCRIPTORS

Negative Early Life Events;
Childhood Adversities;
Family Violence;
Social Anxiety;
Liebowitz Social Anxiety Scale.

Abstract

Introduction: There is substantial evidence regarding the impact of negative life events during childhood on the aetiology of psychiatric disorders. We examined the association between negative early life events and social anxiety in a sample of 571 Spanish University students. **Methods:** In a cross-sectional survey conducted in 2007, we collected data through a semi-structured questionnaire of sociodemographic variables, personal and family psychiatric history, and substance abuse. We assessed the five early negative life events: (i) the loss of someone close, (ii) emotional abuse, (iii) physical abuse, (iv) family violence, and (v) sexual abuse. All participants completed the Liebowitz Social Anxiety Scale. **Results:** Mean (SD) age was 21 (4.5), 75% female, LSAS score was 40 (DP = 22), 14.2% had a psychiatric family history and 50.6% had negative life events during childhood. Linear regression analyses, after controlling for age, gender, and family psychiatric history, showed a positive association between family violence and social anxiety score ($p = 0.03$). None of the remaining stressors produced a significant increase in LSAS score ($p > 0.05$). **Conclusion:** University students with high levels of social anxiety presented higher prevalence of negative early life events. Thus, childhood family violence could be a risk factor for social anxiety in such a population.

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Introduction

In the past decade, a growing number of studies had proposed negative life events during childhood as risk factors that induce psychopathology in adulthood.¹⁻³ Traditionally, traumatic events, such as sexual abuse, have been studied in patients with post-traumatic stress disorder.⁴ Previous research has yielded considerable evidence of an association between affective/anxiety disorders and childhood adversities.⁵⁻⁸ Moreover, recent publications have focused on the impact of childhood adversities on the onset, persistence, and functional impairment of psychiatric disorders.⁹⁻¹¹ Despite the growing interest in this phenomenon, little is known about the effect of negative childhood events on social anxiety.

The psychiatric impact of adversities seems to begin during childhood.¹² Recently, one study¹³ found an association between exposure to violence and preschool psychopathology symptoms even when other key factors, including economic disadvantage, parenteral mood and anxiety symptoms, were statistically controlled. A study of 1,364 adoptees found that children who suffered adversities prior to adoption had an increased risk of anxiety, mood, and substance use disorders in adulthood.¹⁴ This result suggests that, even when adversities occur over a short period of time, the risk persists into adulthood. In agreement with this finding, a 45-year prospective study that collected data on a wide range of adversities in subjects' lives at 7, 11, and 16 years of age and evaluated adult and mid-life psychopathologies suggested that this risk association does not decrease throughout the life course.¹⁵

Although the mechanisms and pathways linking negative life events and psychopathology are unclear and obviously complex, neurobiological factors may play pivotal roles.¹⁶ Because early brain development is constantly modified by environmental influences, it is reasonable to believe that certain adverse experiences may affect a child's future development and functioning. The hypothalamic-pituitary-adrenal axis and corticotrophin-releasing factor are hypothesised to be deregulated following traumatic childhood events.^{17,18} These data highlight the importance of identifying such risk factors and investigating how they are related to the aetiology of psychiatric disorders.

Social anxiety is characterised by a marked and persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or possible scrutiny by others. In the more severe form, social anxiety disorder is one of the most common anxiety disorders, with a prevalence ranging from 7% to 10%.^{7,19-21} There is some evidence that negative life events may play a role in the development of social anxiety disorder. For instance, in a representative sample of the US population,²² the relationship between chronic traumatic experiences during childhood and the onset of agoraphobia, specific phobia, and social phobia was investigated. It was observed that sexual assault by a relative and verbal aggression have unique effects on social phobia. In addition, in a Canadian population-based community study,²³ a positive relationship between social anxiety disorder and a wide range of childhood adversities was observed, including a parental history of mental disorders and childhood physical and sexual abuse. More recently, using data from the Netherlands Study of Depression and Anxiety,²⁴ one study examined the specificity of childhood adversities and negative life events across anxiety and depressive

disorders. The authors observed that emotional neglect was specifically associated with social anxiety disorder, depressive disorders, and dysthymia, supporting previous data recorded from psychiatric outpatients.²⁵

The present study investigated the association between social anxiety symptoms measured using the Liebowitz Social Anxiety Scale (LSAS)²⁶ and early negative life events - (i) the loss of someone close, (ii) emotional abuse, (iii) physical abuse, (iv) family violence, and (v) sexual abuse - in a cross-sectional survey of university students. We specifically focused on the university student population because it is composed of young adults with an age range by which social anxiety has developed in 80% of the cases.²⁷ We hypothesised that early negative life events would be associated with social anxiety in university students.

Methods

Sample and procedure

The study was a cross-sectional survey of university students conducted in 2007. We selected 581 university students of both genders from the Universitat Autònoma de Barcelona (UAB). Ten participants were excluded because they did not complete the instruments correctly. Thus, the final sample consisted of 571 participants. The students were recruited through an advertisement that was distributed at different locations on the university campus. Subjects received a small payment for participating. The study was approved by the university's Research Ethics Committee.

After being informed of the nature of the study, all participants provided written informed consent. A sociodemographic questionnaire, an assessment of family history of psychiatric disorders, a negative life event questionnaire, and the LSAS were administered to all participants.

Measures

A semi-structured questionnaire that included sociodemographic variables was designed *ad hoc* by the research team using questions that were coded dichotomously as "absent" or "present". A family history of psychiatric disorders was specifically assessed for each first-degree family member (0 = absent; 1 = probable; 2 = present; 4 = unknown). Only the "present" categories were considered evidence of a positive family history of psychiatric disorders.

Negative life events were assessed retrospectively using five closed questions regarding early adverse life events. Subjects were asked whether they had experienced one of the following life events before 18 years of age: (i) the loss of someone close, (ii) emotional abuse (verbal communication with the intention of humiliating or degrading the victim), (iii) physical abuse (physical contact, constraint, or confinement, with the intention to hurt or injure), (iv) family violence, or (v) sexual abuse (unwanted sexual contact performed solely for the gratification of the perpetrator or for the purposes of dominating or degrading the victim). These events were coded dichotomously as absent or present. The total number of early adverse life events was also registered. We did a test-retest reliability study of the five closed questions in a sample of 186 university students who were

re-evaluated between one and two months and the results showed that kappa statistics ranged between 0.80 and 1.00.

Social anxiety was assessed using the validated Spanish version of the LSAS.^{26,28} It consists of 24 items, each describing a different social situation. The LSAS evaluates the severity of anxiety and social avoidance in a wide range of typical social situations. The fear ratings are based on how much fear or anxiety the patient experiences in such social situations, measured by a Likert scale (0 = never; 1 = occasionally; 2 = often; 3 = usually). It is one of the most commonly used anxiety disorder rating instruments and demonstrates satisfactory psychometric properties for research and clinical purposes. The Spanish validated version of LSAS showed good level of internal consistency ($r = 0.61-0.93$), the ROC analysis between social phobia subjects and healthy controls was AAC = 0.95-0.99), and intra-class correlation showed a good level of reproducibility (ICC = 0.63).²⁸ To describe the sample we used the cut-off proposed by RR for positive screening for social anxiety disorder (LSAS score > 60).²⁹

Statistical analysis

Absolute and relative frequencies were used to describe the qualitative variables. For the quantitative variables, we calculated means and standard deviations. For the univariate analyses, we used the chi-square test and Student's *t*-test for the qualitative and quantitative variables, respectively. Pearson correlation analysis was used to explore whether the five negative early life events were associated with one another. To examine the association between negative life events and social anxiety scores, a linear regression analysis, adjusted according to age, gender, and family psychiatric history, was conducted.

The data analyses were carried out using the SPSS 17 (SPSS Inc., Chicago, IL, USA) statistical software package.

Results

Descriptive and univariate analysis

The mean age of the sample was 21 years (SD 4.5); 75% were women. The frequency of family psychiatric history was 14%. Ninety-eight percent of participants were Caucasian. The mean (SD) LSAS score was 40 (SD = 22; median = 35; range = 1 to 116). In the total sample, 50.6% of the students had a negative life event during childhood (Table 1).

Table 2 shows the relationship between each negative life event. Most of the statistically significant correlation coefficients showed either a weak positive association ($r = 0.3$ to 0.7) or little to no association ($r = -0.3$ to 0.3).³⁰

Association between LSAS total score and negative life events

The linear regression analyses to determine the association between negative life events and social anxiety score are presented in Table 3. There was a positive association between family violence and social anxiety score after we statistically controlled for other negative life events, such as age, gender, and family psychiatric history. Subjects who have experienced family violence had a 12-point increase in LSAS total score ($p = 0.03$; 95% CI = 1.97 to 21.3). None of the remaining stressors produced a significant increase in LSAS score.

Discussion

The primary goal of this study was to investigate the association between negative life events during childhood and social anxiety disorder in adulthood, using a social anxiety scale. We found that only family violence was associated

Table 1 Characteristics and comparison of the university sample (N = 571)

	Total sample N = 571	LSAS > 60 * N = 112	LSAS = 0-30** N = 231	p value
Age: mean (SD)	21 (4.5)	21.3 (3.9)	22.5 (5.6)	0.069
Female: N (%)	427 (74.8)	88 (78.6)	166 (71.9)	0.052
Male: N (%)	144 (25.2)	24 (21.4)	65 (28.1)	0.052
Family psychiatric history: N (%)	81 (14.2)	19 (16.9)	23 (9.9)	0.001
LSAS score: Mean (SD)	40 (22)	77.4 (13.4)	20.2 (6.9)	0.000
N# of early life events: mean (SD)	0.64 (0.79)	0.84 (1)	0.45 (0.58)	0.001
Loss of someone close: N (%)	226 (39.9)	46 (38)	75 (62)	0.118
Emotional abuse: N (%)	77 (13.5)	23 (54.8)	19 (45.2)	0.000
Physical abuse: N (%)	20 (3.5)	8 (72.7)	3 (27.3)	0.004
Family violence: N (%)	23 (4)	11 (78.6)	3 (21.4)	0.000
Sexual abuse: N (%)	22 (3.9)	6 (60)	4 (40)	0.061

LSAS: Liebowitz Social Anxiety Scale; * LSAS > 60: positive screening for social anxiety disorder; **LSAS = 0-30: positive screening for absent of social anxiety disorder.²⁹

Table 2 Correlations among five negative life events

	Loss of someone close	Emotional abuse	Physical abuse	Family violence	Sexual abuse
Loss of someone close	---	0.005	0.119**	-0.002	0.043
Emotional abuse	0.005	---	0.371**	0.232**	0.134**
Physical abuse	0.119**	0.371**	---	0.349**	0.011
Family violence	-0.002	0.232**	0.349**	---	0.098*
Sexual abuse	0.043	0.134**	0.011	0.098*	---

*p < 0.05; **p < 0.01.

Table 3 Association between negative early life events and total Liebowitz Social Anxiety Scale score

	Regression coefficient β^*	t	p value	95% CI	
Loss of someone close	2.164	1.124	0.261	-1.61	5.94
Emotional abuse	7.718	1.338	0.181	-3.61	19.0
Physical abuse	3.653	1.221	0.223	-2.22	9.52
Family violence	12.03	2.17	0.030	1.97	21.3
Sexual abuse	3.314	0.673	0.502	-6.36	12.9

* Adjusted for the variables: age, gender and a positive family psychiatric history.

with social anxiety, even after controlling for age, gender and family psychiatric history. The loss of someone close, emotional abuse, physical abuse and sexual abuse before 18 years of age were not associated with the presence of social anxiety in our sample of university students.

Previous studies have shown that family violence is associated with the onset, persistence, and functional impairment of psychiatric outcomes (in the National Comorbidity Survey in the USA), with a particularly strong impact on anxiety disorders.⁹⁻¹¹ Moreover, it was recently found that family dysfunction is a strong predictor of the onset of psychopathology throughout the lifetime of a Mexican population sample.³¹ This study found an association between family violence and social anxiety. A previous study²² demonstrated that verbal aggression between parents, which is a subtype of family violence, has negative effects on social anxiety. In contrast with previous literature,^{21,22} the present results did not show that emotional abuse is associated with social anxiety. One possible explanation for the lack of such an association is the fact that the present study did not consider the persistence, recurrence, severity, and subjective impact of emotional abuse, which may play a crucial role in this association. In the present sample, family violence had weak positive correlations with emotional, physical and sexual abuse. However, this study cannot answer whether this early life negative event is or is not specifically associated with social anxiety or general psychopathology in adulthood. Thus, some authors have suggested that specific adversities might contribute to specific psychiatric disorders,²⁴ whereas others have suggested that childhood adversities are nonspecific risk factors for adult psychopathology.^{25,32}

This study has some methodological limitations that must be considered. The results cannot be generalised to the general population, as the sample was only composed

of university students. The retrospective nature of assessing negative life events may be affected by recall bias. However, there is some evidence that the under-reporting of childhood maltreatment is more likely to occur than over-reporting.³³ Moreover, it would be interesting to explore childhood emotional neglect.^{24,34} Because we measured social anxiety using a rating scale (LSAS), a clinical diagnosis (DSM-IV) would have been a second necessary step to extrapolate the results to people with full-blown social anxiety disorder and control for other psychiatric disorders. However, the LSAS cut-off for social phobia has been shown to have considerable psychometric properties for identifying subjects with social anxiety disorder.²⁹ Finally, it should be acknowledged that, given the cross-sectional design of this study, we cannot make any conclusions about the causal effect of negative life events on social anxiety. It is evident that not all children who suffer negative life events develop mental health problems later in life. Unmeasured confounding variables, such as genetic features, personality traits, and resilience factors, may influence and/or mediate this association.³⁵⁻³⁷

These results may have clinical and epidemiological implications. On the one hand, considering that family violence is unacceptable, but real in many countries,³⁸ it is clear that future research needs to focus on childhood prevention and intervention programmes to prevent adulthood psychopathologies, such as social anxiety disorder. The first step in determining where to focus our efforts is to conduct epidemiological studies. On the other hand, a considerable number of university students have social anxiety problems.³⁹ This makes the university population an important source for early detection and treatment of social anxiety disorder. It is necessary to emphasise that, despite the disability and impairment associated with social anxiety,⁴⁰ individuals with this disorder usually only seek for treatment after 15-20 years of symptoms.⁴¹ Finally, it

is known that the rates of psychiatric comorbidities and the impairment of psychosocial function increase progressively over the course of social anxiety disorder.⁴²

In summary, the present results highlight the importance of including family violence when studying the childhood risk factors for social anxiety in university students. Future studies addressing these issues are still necessary and desirable.

Acknowledgements

We thank all the university students from the UAB who participated in the study. We also thank P. Castellví, and A.B. Fagundo, who participated in the administration of the protocol to the participants. The study was funded by grants from Instituto Carlos III (G03/184) and SGR2009/1435. JASC (1B) and AEN (1A) are recipients of a CNPq Research Productivity Award.

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* Modest

** Significant

*** Significant: Amounts given to the author's institution or to a colleague for research in which the author has participation, not directly to the author.

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